

Translation

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference CP/AC 59.782	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FR00/01723	International filing date (<i>day/month/year</i>) 21 June 2000 (21.06.00)	Priority date (<i>day/month/year</i>) 21 June 1999 (21.06.99)
International Patent Classification (IPC) or national classification and IPC C12Q 1/68		
Applicant INSTITUT DE RECHERCHE POUR LE DEVELOPPEMENT (I.R.D.)		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u> </u> sheets.</p>	
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input checked="" type="checkbox"/> Certain observations on the international application</p>	

Date of submission of the demand 01 August 2000 (01.08.00)	Date of completion of this report 19 September 2001 (19.09.2001)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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I. Basis of the report

1. This report has been drawn on the basis of (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

☐ the international application as originally filed.

☒ the description. pages 1-65, as originally filed,
pages _____, filed with the demand.
pages _____, filed with the letter of _____,
pages _____, filed with the letter of _____.

☒ the claims. Nos. 1-14, as originally filed.
Nos. _____, as amended under Article 19.
Nos. _____, filed with the demand,
Nos. _____, filed with the letter of _____,
Nos. _____, filed with the letter of _____.

☒ the drawings. sheets/fig 1/14-14/14, as originally filed,
sheets/fig _____, filed with the demand.
sheets/fig _____, filed with the letter of _____,
sheets/fig _____, filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

☐ the description. pages _____

☐ the claims. Nos. _____

☐ the drawings. sheets/fig _____

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

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III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
- ☒ claims Nos. 6, 7

because:

- ☐ the said international application, or the said claims Nos. 6, 7 relate to the following subject matter which does not require an international preliminary examination (*specify*):

- ☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 6, 7 are so unclear that no meaningful opinion could be formed (*specify*):

See separate sheet

- ☒ the claims, or said claims Nos. 6, 7 are so inadequately supported by the description that no meaningful opinion could be formed.
- ☐ no international search report has been established for said claims Nos. 6, 7

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box III

Product claims in which the products are defined in terms of their production method are only acceptable if the products *per se* fulfil the criteria of patentability, that is to say, *inter alia*, if they are novel and involve an inventive step. However, with regard to the present Claims 6 and 7, it is not possible to determine whether the proteins as defined fulfil those patentability criteria. This is due to the fact that the only technical feature of the said proteins is the fact that they form a complex with a pathogenic virus and that they are not recognised by a capsid anti-protein monoclonal antibody of the pathogenic virus. These proteins are not, however, defined by an amino acid sequence. Furthermore, and contrary to the arguments put forward by the applicant, the complexes formed by viral proteins with proteins of the host plant vary from one tissue to another (page 2, line 6, to page 3, line 2). For these reasons, it is not possible to differentiate the said proteins from the majority of known and unknown proteins, and neither is it possible to determine whether the said proteins are novel.

In view of the foregoing points, Claims 6 and 7 are so unclear (PCT Article 6) that no opinion can be formed as to novelty, inventive step or industrial applicability within the meaning of PCT Article 33(2), (3) and (4) (PCT Article 34(4)(a)(ii)). Furthermore, the description does not support (PCT Article 6) the undefinable number of proteins covered by the scope of these claims.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-5	YES
	Claims	8-14	NO
Inventive step (IS)	Claims	1-5	YES
	Claims	8-14	NO
Industrial applicability (IA)	Claims	1-5 and 8-14	YES
	Claims		NO

2. Citations and explanations

1. Since the priority date claimed by the present application is validly claimed, the document "Database EMBL, 2000, Access N° AZ132900", which is cited in the search report as a P-category document, cannot be considered to represent prior art within the meaning of PCT Article 33(2) and (3).

2. D1 (Proceedings of the National Academy of Sciences USA, 1998, 95: 3323-3328), which is considered to represent the closest prior art, describes (see abstract; Figure 1; and page 3323, column 2, line 37, to page 3324, column 1, line 2) a method for isolating proteins involved in transporting a pathogenic virus, from which the method defined in independent Claim 1 differs in that the non-immunodetected bands are recovered, and not the detected bands as in the method of D1. This difference makes it possible to recover proteins belonging to the host plant which link with the virus to form a complex.

2.1 Thus, the problem addressed by the present Claim 1 can be considered to be that of providing a method for recovering proteins belonging to the host plant

and linked to the virus as complexes.

- 2.2 None of the available prior art documents either discloses or suggests modifying the method of D1 to achieve that aim.

Consequently, independent Claim 1 satisfies the requirements of PCT Article 33(2) and (3).

- 2.3 Dependent Claims 2-5 define variations of the method defined in Claim 1 and are therefore likewise novel and inventive within the meaning of PCT Article 33(2) and (3).

3. Almost any DNA fragment of three or four nucleic acids satisfies the criteria defined in Claims 8-14 (see also Boxes III and VIII). Moreover, some of the cDNAs disclosed in D2 (Theor. Appl. Genet., 1998, 97: 1145-1154; Figure 2, chromosome 4) and D3 (Theor. Appl. Genet., 1998, 97: 1155-1161; Figure 1, chromosome 4) also satisfy those criteria. Claims 8-14 are therefore not novel within the meaning of PCT Article 33(2).

- 3.1 The applicant should note that the isolation of cDNA is widely known and that a cDNA is therefore only considered to be inventive within the meaning of PCT Article 33(3) if the said cDNA is associated with a particular function.

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VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. Claims 3 and 5 do not meet the requirements of PCT Article 6 in so far as the subject matter for which protection is sought is not clearly defined. These claims attempt to define that subject matter in terms of the result to be attained. Furthermore, a molecular weight is a variable quantity which depends on the electrophoresis conditions, for example; these conditions should therefore also appear in the claims.
2. Claims 8-14 are unclear (PCT Article 6). These claims attempt to define non-defined subject matter, i.e. a cDNA corresponding to (does this mean coding for?) a non-defined protein (see Box III), where said cDNA is defined by reference to a method using a non-defined library, i.e. a BAC clone set spanning a region between 2 microsatellite labels.